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TO: DWSE Staff

THROUGH: Robert W. Hicks, Director
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SUBJECT: Water – Procedure – Sample Collection – Stage 1
Disinfection Byproducts Rule (DBPR)

REFERENCE: Waterworks Regulations 12 VAC 5-590-370 B3e

Section 142.132(a)(2) of the Stage 1 DBPR gives States the discretion to allow waterworks to reduce TTHM and HAA5 monitoring and associated costs by considering multiple wells drawing water from the same aquifer as one treatment plant for determining the minimum number of TTHM and HAA5 samples required. This provision is applicable when there are multiple treatment plants applying the same disinfectant to multiple wells completed in the same aquifer. To qualify for the ability to make this discretionary reduction, States must establish criteria under this special primacy requirement. The criteria adopted by States should be designed to ensure that each well is indeed drawing from the identified aquifer and the finished water quality characteristics of all wells are very similar. Thus, the water from the wells should be expected to react alike in terms of formation of disinfection byproducts.

In general, EPA recommends and DWSE will require waterworks that are seeking a reduction in monitoring under 142.16(f)(5) to submit a study performed by a professional competent in the field of hydrogeology such as a geologist, hydrogeologist, or professional engineer. The study must show with reasonable certainty, that all wells are completed in, and drawing water from, the same aquifer and that the water quality characteristics/chemistry of each well are enough alike to conclude disinfection byproduct formation would be very similar.

The criteria below must be included in the study and in our consideration for making these determinations:

Well construction and geology

! Well locations – the locations of all wells should be marked on topographic maps.

- ! Well depths.
- ! Well logs – the logs should show the geological strata encountered during well construction, identify water producing zones, screened or slotted sections, and grouting.
- ! Static water levels based upon a common elevation point.
- ! Aquifer studies and maps.
- ! Treatment applied.

Water characteristics and chemistry

- ! pH (field).
- ! Temperature (field).
- ! Specific conductivity.
- ! Total organic carbon (TOC).
- ! Analyses of common ions with a calculated cation/anion balance (calcium, magnesium, iron, manganese, sodium, sulfate, alkalinity and chloride).

In many cases there may be reports, maps, or studies available from State or Federal agencies that will be helpful in making the determinations.

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